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(54) APPARATUS FOR OPTICAL MEASUREMENT

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(57) Abstract:

PURPOSE: To obtain an optical range finder or group refractive index meter being simple and of high accuracy.

CONSTITUTION: A laser light from LD(laser diode) 110 is applied to a reflector through a fiber 131. A light-detecting part 200 detects a reflected modulated light reflected by an object and returning from it and outputs a signal reflecting a phase difference between the laser light and a modulated signal. On the basis of the value of that signal, the frequency of the modulated signal is changed and phase-locked finally. When the frequency of the modulated signal is fixed by being phase-locked, accordingly, this frequency always corresponds to the distance from the LD 110 to the reflector and the group refractive index of a substance filling an optical path. On the bases of an output frequency at the time point of being phase-locked, the distance to the object or the group refractive index of the substance filling the optical path at this time can be determined simply and with high accuracy.

